Notes on Meeting with Kevin Kelly of Whole Earth
at Sausalito, 2/10/87
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Editorial Content

Will start with Essential Whole Earth Catalog material, and use material from "Signal" (description attached) to make the portions related to communication and information much more complete and deep. Will also include new material to be generated for a "Tools for Business" book. We would like to include a "software sampler" on the CD, with demo versions of Mac software which is reviewed. Could make an effort to include reviews of more Mac programs, and other CD-ROMs. We would add in the complete Wildcard help stacks, as well as Kevin's "How to build an Electronic WEC" article and copies of the scripts and templates used (at our discretion).

EWEC material must be "reaccessed" to make sure prices, addresses, and so on are still accurate. This will be done first so that translation to Wildcard can begin. Signal and Tools for Business material will take longer to start because research and writing must be done from scratch. Kevin: half life of a review is two years, but half life of the access information is only six months.

We anticipate that this material, inclusive of bit graphics but exclusive of digitized sound, will occupy 20,000 Wildcards and 40 to 60 megabytes of storage. We feel this is "large enough to be interesting, small enough to be possible."

Not included in the first version: personal tours, department store metaphor. Statement that we are building a "better book", rather than a "better store". Should be an opportunity for Apple people to build such material on top of the CD-ROM and Kevin can include if he desires. This would fit into Whole Earth's desire to promote feedback in the electronic edition as well as print.

Time, Personnel, Equipment

Preliminary estimate of time is one hour per card, or 20,000 man-hours for the entire job. This includes research, data entry, linking, and proofreading. Given Kevin's and my estimate of cards/page equivalent, this is about the same as 25 man-hours per page for 800 page equivalents. This is roughly the same time per page required for the last print edition. Again, we're assuming that leverage from the electronic format will balance with costs of learning the new medium.

To accomplish the project between March 1 (an optomistic start date) and September 1, Whole Earth will need 20 full time people for the period. They are used to this type of steep ramp-up, have qualified people they can call on, and did the same thing last summer for the EWEC. The classifications of people are:

- Researcher/Accesser
- Text Entry
- Graphic and sound entry
- Designer
- Link manager and indexer
- Editor

The number assigned to each task will vary through the project. Information will move through in two big lumps: the EWEC and the Signal/Business Tools sections. Whole Earth traditionally uses this "lump in the snake" project style.

Because a large portion of the manpower will be used for research, we will not need a full machine per person. We can also take advantage of existing DOS machines at Whole Earth for raw text entry if this becomes a bind. These are the current estimates for equipment requirements:

6	Mac Plus or Maui
1	File Server
1	80 megabyte hard disk for server
2	20 megabyte hard disk (for graphics input station and designer)
2	Laserwriter Plus (could settle for one, if necessary)
1	Scanner (preferably flatbed)
1	Camcorder for video capture
1	Preview monitor
1	Frame grabber - MacVision or Datacopy
1	Dubbing tape deck
1	Sound digitizer - SoundCap or better
many	yards of Appletalk cable

It would be very desirable to have some backup method for the server, preferably a streaming tape. (This configuration will be a good test of the Server in a high intensity project.) We should also request a test unit of the new universal 5.25" drive from reading in DOS disks. This could be a field test for that project and the XFS/MS-DOS software.

We envision storing sound samples on audio tape, doing a preliminary digitizing run at Whole Earth to get the feel of the presentation, but using Apple's Sound Lab or another studio for full CD-DA conversion of the sound before going to production. However, the video capture setup at Whole Earth should be full studio quality - there will be too much material to shoot twice.

Cost

Whole Earth plans on an average labor cost of $10/hour, with an overhead rate of 50%. This yields a budget of $300,000 for the project. Apple will receive non-exclusive rights to the material, including the right to make 12,000 copies without further charge. Apple should get ownership of generic scripts, templates and methods developed. We should also get a final report on what was learning about Wildcard and CD-ROM as a medium, conventions of use for same, and suggestions for enhancement of Wildcard as an authoring and playback tool. (If we're serious about testing Wildcard on a large database authored specifically for the medium, this is about as cheap as we will ever get it!) Whole Earth gets the rights to sell the disc on their own, to charge us for it after the initial run, and to update and augment the material as a subscription database on a continuing basis. We should investigate a way to develop a joint mailing list of buyers of the Electronic WEC.

Alternative scenarios: The only way to reduce the cost is to reduce the amount of material and number of cards. We can't take this too far or the value of the test of Wildcard/CD-ROM is lost, and the value of the final disc is compromised. Unfortunately, the newer Signal/Business Tools material is the more desirable from Apple's point of view, but is also more costly and occurs later in the schedule because it will be freshly researched. The older EWEC material is cheaper because it must only be reaccessed, not rewritten, and it occurs first in the schedule. We could drop some of the EWEC material to save costs, but would take a corresponding schedule risk if the Signal material took longer to research than anticipated, or if the production mechanism setup proved incapable of handling the bulk of material and had not been tested by converting EWEC.

Technical Issues: Wildcard Capabilities

- Would like a way to add menu entries from the deck.
- Would like a diagonal wipe visual effect to simulate page turning. Alternately, a horizontal wipe with visible line (Ted says this can be done by slowing down the existing effect.)
- Can Draw files be imported?
- Would like a script to stamp "page numbers" on a card
- VERY desirable to switch fonts and styles within a field. Styles probably more important than fonts. Would like bold to indicate links and italic and underline for general use. (Can fake this by stamping graphic text on top of the regular field. Poses problems with updating. Crufty but feasible.)
- VERY IMPORTANT to be build template decks and scripts to gather the review's text and put in the standard links. Sort of a data query method. This will allow partitioning the text entry and link editing task, and gives good leverage on use of Wildcard as an entry environment. (Ted thinks scripts to do this are possible. The best way to set up the templates may be to have multiple backgrounds in one deck, and make a copy everytime a new article is started. Then each deck corresponds to one "plastic bucket" in the current WEC methodology. This leads to another problem...
- How do we merge multiple decks created in this fashion within getting into conflict of card IDs? We must ensure uniqueness within a deck, and appropriately update links on the cards being merged in to reflect any changes. Is there a quick kludge to start the numbering at a different point on each machine?
- If a button defined at the background level is pointed to a new place, do all card's button change also? If so, is there a way to define the existance and appearance of a button in the BG, but have an independent target on each card?
- We would like to use the ability to build "pop-up" fields to simulate the "marginalia" in the NWEC. Issues: Some way to pop-up graphics? A way to have the pop-up be of different size on different cards. Would like the "marker" for the popup on each card to be one of a large set of eye-catching icons. What's an efficient way to present a palette of icons to the author/editor?

Technical Issues: Theoretical

- One research result (and determining factor of success) is the "gain" of the tools for building the data base. This relates the dollars and time expended to the actual "production value" achieved in the WEC disc. This is an important measure of Wildcard's viability as a medium, and we need to narrow this down very quickly. Right now, we assume that the ratio to print methods will be ONE, that is, the extra leverage of the electronic method will trade off against the need to learn and understand it. Anything we can do early in the project to improve this will have a large impact. Anything that reduces it drastically will cause the project to fail!
- The location and neighborhood problem must be faced. Even without considering "sideways" links and personalized tours, an article could be linked into several places. For instance, a review on maps might be linked into Nomadics, Communication, and Whole Systems. How do we indicate the possible paths? The articles that precede/follow on each path? How do remember and indicate the current browsing path? This has to be traded off against screen real estate. The current tab format is already cramped with 9 point type and no effects.
- Can we build a "canonical map" in which one could see position? Just what is an appropriate map? How could it be maintained if the database is continually

updated?

- What kind of algorithmic generation could be used? Could we use an "up, down, around" choice of what to view? Down = components of the current article. Around = articles before/after the one on all paths passing through. Up = possible ways this article falls into a hierarchy.

- Philosophical questions. Is asking one tool to provide "location" too much? Are we really looking for ways to "get lost" and other ways to "be found"?

- What does it mean to "be found"? Knowing the name of the current location isn't enough without knowing how it fits it. Is there a "canonical path" to each place, e.g., Nomadics/Trout Fishing/Selective Trout? If multiple are possible, which one is used? Are all used? Tim: I have yet to use a hypertext system that gives me a kinesthetic sense of location. The closest I've come is after a long period of using the Grolier hypertext, when I could get a feel for location in one or more very fuzzy concept clusters. Comments, anyone?

- There are different ways of "getting lost", that is, asking the machine to take you to someplace new. Using a hiking metaphor, one way is to to say "I'll take the next turn, no matter where it leads." Another is to say, "I'm at a crossroads, which of the N choices looks more interesting?" Another is to look toward that horizon and say "That's a neat mountain over there. Let's start working our way generally in that direction." All of these are different from goal oriented uses: "I want to get to this location by the shortest path" or "I know this item is out there somewhere, let's find it."

- The notion of optimal links per card for human use may be more important that we suspected. If it's not substantially more than can be achieved on paper, our potential gains from hypertext are limited to those made possible by non-standard topologies. Can we define the "fractal dimension of human information use"?